

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-189302

(43)Date of publication of application : 10.07.2001

(51)Int.Cl. H01L 21/3065  
H01L 21/441  
H01L 21/768

(21)Application number : 11-372006

(71)Applicant : TOSHIBA CORP

(22)Date of filing : 28.12.1999

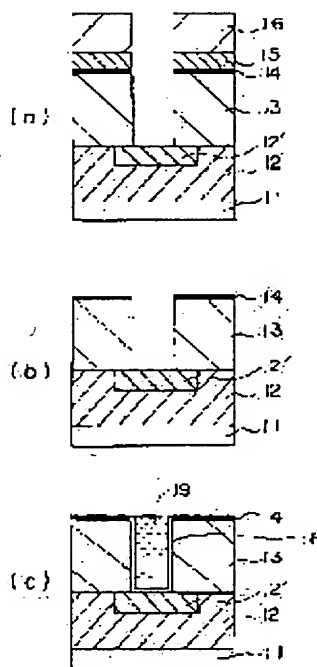
(72)Inventor : SETA SHOJI  
ICHINOSE HIDEO

## (54) METHOD OF DRY ETCHING AND METHOD OF MANUFACTURING SEMICONDUCTOR DEVICE

## (57)Abstract:

PROBLEM TO BE SOLVED: To provide a method by which a coating film formed on a base film and containing carbon atoms can be ashed, without ashing the base film in a method of drying etching the coating film, by using an activated reaction gas of a new composition.

SOLUTION: In the method of dry etching, a film containing carbon atoms, composed of a photoresist, etc., and formed on the base film, such as an insulating film, etc., is ashed, by using a gas containing carbon atoms or a reaction gas (O<sub>2</sub>/CO, etc.), containing carbon atoms and at least oxygen atoms, nitrogen atoms, or hydrogen atoms. An antireflection film 15 and a photoresist 16 are formed on an insulating film (LKD film) 13, which is reduced in dielectric constant and a contact hole is made to reaching wiring 12' through the insulating film 13. Thereafter, the photoresist 16 and antireflection film 15 are removed through ashing, by using the dry etching method. Consequently, the photoresist 16 can be ashed efficiently, without the underlying insulating film 13 being ashed.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

BEST AVAILABLE COPY